

NEW CLAIMS

Please enter new claims 20-23 below:

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20. (new) A communication system for providing multiline phone and data service over a single telephone line, the communication system comprising:
a wall unit configured to multiplex one or more residence-located analog and digital electronic devices onto the single telephone line;
a gateway server connected to an Internet Protocol (IP) network and in communication with a public switched telephone network (PSTN), with the gateway server being configured to route a voice related signal between the wall unit and the PSTN network and further configured to route a data related signal between the wall unit and the IP network; and
a gateway switch connected to the PSTN network and configured to connect the wall unit to the gateway server.

21. (new) The communication system of claim 20, with the gateway server comprising:

a modem pool configured to provide an available modem to connect to and communicate with the gateway switch over a first telephone access line and therefore communicate with the wall unit through the PSTN;

a call processing configured to communicate with the gateway switch over a second telephone access line, convert voice-over-Internet-Protocol (VOIP) encoded signals received from the wall unit via the available modem into analog telephone signals to be transmitted over the PSTN, and convert analog telephone signals received from the PSTN network into VOIP encoded signals for transmission to the wall unit;

#7 a statistical multiplexor in communication with the modem pool and with the call processing and configured to multiplex incoming signals received via the modem pool and the gateway switch to either the IP network or the PSTN network and further configured to multiplex signals received from the IP network and the PSTN network into a single signal to be transmitted to the wall unit through the gateway switch;

a router in communication with the statistical multiplexor and the IP network and configured to route signals to a destination on the IP network; and

a control in communication with the statistical multiplexor over a first signal line, the modem pool over a second signal line, the call processing over a third signal line, and the gateway switch over a fourth signal line, with the control configured to transmit and receive signaling information including call setup signals and termination signals.

22. (new) The communication system of claim 20, with the wall unit comprising:
a modem for exchanging communications signals with a communications network
and for exchanging an incoming digital signal and an outgoing digital signal with a
statistical multiplexor;

the statistical multiplexor for exchanging the incoming digital signal and the outgoing
digital signal with the modem, and for multiplexing an outgoing encoded telephonic call
signal and an outgoing data signal into the outgoing digital signal, and for demultiplexing
the incoming digital signal into an incoming encoded telephonic call signal and an incoming
data signal;

A7 a call processing element coupled to the statistical multiplexor for converting the
incoming encoded telephonic call signal into an incoming phone signal, and for converting
an outgoing phone signal into the outgoing encoded telephonic signal; and

one or more bypassing elements positioned between the plurality of telephonic
devices and the statistical multiplexor and operative to connect the plurality of telephonic
devices either to the call processing element or to the communications network.

23. (new) A gateway server adapted to communicate with a wall unit in order to provide multiline phone and data service over a single telephone line, the gateway server comprising:

a modem pool configured to provide an available modem, with the available modem being adapted to communicate with a gateway switch of a public switched telephone network (PSTN) over a first telephone access line and therefore communicate with the wall unit through the PSTN;

a call processing adapted to communicate with the gateway switch over a second telephone access line, convert voice-over-Internet-Protocol (VOIP) encoded signals received from the wall unit via the available modem into analog telephone signals to be transmitted over the PSTN, and convert analog telephone signals received from the PSTN network into VOIP encoded signals for transmission to the wall unit;

a statistical multiplexor in communication with the modem pool and with the call processing and configured to multiplex incoming signals received via the modem pool and the gateway switch to either an Internet Protocol (IP) network or the PSTN network and further configured to multiplex signals received from the IP network and the PSTN network into a single signal to be transmitted to the wall unit through the gateway switch;

a router in communication with the statistical multiplexor and the IP network and configured to route signals to a destination on the IP network; and

a control in communication with the statistical multiplexor over a first signal line, the modem pool over a second signal line, the call processing over a third signal line, and configured to communicate with the gateway switch over a fourth signal line, with the control configured to transmit and receive signaling information including call setup signals and termination signals.